

REMARKS

Claims 1-3, 8 and 8 are pending in the present application and are rejected. Claims 1, 2 and 7 are herein amended.

Applicant's Response to Claim Rejections under 35 U.S.C. §112

Claims 1-3, 7 and 8 were rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The originally filed claims recited partitioning between first, second and, optionally, third "solutions." The April 26, 2007 Office Action stated that was unclear whether the second and third solutions can be the same, or whether there is a material difference between them. In order to clarify this position, Applicants' representative contacted the Examiner on May 23, 2007. The Examiner questioned whether the solutions, or buffers, were the same among the three claimed solutions. Additionally, the Examiner questioned whether the three solutions were truly "partitioned" by the partition, since a gel is inherently porous. In response, in order to clarify the claimed subject matter, on July 23, 2007, Applicant amended the claims to recite partitioning a container into first, second and, optionally, third "buffer chambers." This amendment clarified that the partition (*i.e.*, a gel) partitions chambers or regions of a container.

However, in the Office Action dated August 9, 2007, the Examiner stated that the recited term first, second and third "buffer chambers" was not used in the original disclosure, and was thus deemed to be new matter. Additionally, the Examiner stated that it was unclear as to the

meaning of the term “buffer chamber.” The Examiner stated that if this were a “true chamber, which is closed on all sides,” then it is unclear how the biopolymers would pass through the filter into a second buffer chamber. The Office Action also inquired as to whether the partitioning is physical, or can be virtual, such as a zone or region delineated by a control device.

On September 7, 2007, Applicant’s representative contacted the Examiner by telephone to inquire as to whether the term “area” would be acceptable instead of “buffer chambers.” Applicant noted that while the specification does not use the term “area,” this is clearly illustrated in the Figures. The Examiner acknowledged that this would be an acceptable claim term. Please see the Interview Summary dated September 18, 2007, where it is stated that “Mr. Sisson indicated agreement to the term “area” in place of “buffer chamber.”” Continuation sheet, lines 2-3. Accordingly, on November 8, 2007, Applicant amended claims 1, 2 and 7 to recite first, second and third “areas” instead of “buffer chambers.”

However, the February 6, 2008 Office Action alleges that claims 1, 2 and 7 are confusing as a result of the amendment to recite a “first area,” a “second area,” and a “third area.” The apparent confusion appears to be based on an inappropriately narrow definition of the term “area” as being limited to the geometrical definition of length times width. Of course, “area” also is synonymous with words such as “space,” “zone,” “region,” etc. However, the Office Action appears to interpret “area” as being limited to two dimensions. For example, the Office Action states that “[i]t is less than clear as to how one is to fashion an “area” when the “partition” is a pillar array, which is three dimensional, while an area is two dimensional.” February 6, 2008 Office Action, paragraph 5. The Office Action goes on to state that “[i]f one is to fashion an

“area,” which is two dimensional and thusly without volume, it is unclear how the biopolymer, which is three-dimensional, can be trapped in two-dimensional area, much less be cause to pass on to a second and/or third area.” February 6, 2008 Office Action, paragraph 6. Finally, the Office Action states that “[a]cknowledgement is made of the figures depicting a device performing electrophoresis (see Figure 3, below) and that the surface of the device does occupy an “area,” however, such illustrations do not identify “a gel, a pillar array, or a porous filter” as being a first or second area.” February 6, 2008 Office Action, paragraph 7. This final statement is particularly confusing to Applicant, since the claims require that the partition is “a gel, a pillar array or a porous filter.” The claims do not recite that the first or second areas are “a partition, a pillar array or a porous filter.”

In the Request for Reconsideration dated June 25, 2008, Applicant argued that that amendment is not necessary in order to overcome the pending rejection based on 35 U.S.C. §112, second paragraph. It is improper to merely select any definition of claim terms which is convenient. While the Office is entitled to the broadest reasonable interpretation of claim terms, “during examination the U.S.P.T.O. must give claims their broadest reasonable interpretation *in light of the specification*.” See MPEP §2111.01 (emphasis added). Accordingly, it is required that claim terms be given their plain meaning, unless this plain meaning is inconsistent with the specification.

The ordinary and customary meaning of a term may be evidenced by a variety of sources, including “the words of the claims themselves, the remainder of the specification, the prosecution history, and extrinsic evidence concerning relevant scientific principles, the meaning

of technical terms, and the state of the art.” *Phillips v. AWH Corp.*, 415 F.3d at 1314, 75 USPQ2d at 1327. If extrinsic reference sources, such as dictionaries, evidence more than one definition for the term, the intrinsic record must be consulted to identify which of the different possible definitions is most consistent with applicant’s use of the terms. *Brookhill-Wilk I*, 334 F.3d at 1300, 67 USPQ2d at 1137.

Applicant respectfully argues that the ordinary and customary meaning of the term “area,” in view of the specification, is a definition of space which is synonymous to “zone,” “region,” etc. Additionally, the ordinary and customary term of meaning of the verb “partitioning,” in view of the specification, is the act of dividing a space into parts. Finally, the ordinary and customary meaning of the noun “partition,” in view of the specification, is an object which divides a larger space into two or more parts. Please see previously submitted dictionary definitions from the *American Heritage Dictionary of the English Language*, 3rd Edition.

The Advisory Action dated July 24, 2008 briefly dismisses the three pages of comments regarding the rejection under 35 U.S.C. §112, second paragraph. The Advisory Action simply stated that a text search of the specification showed that the term “area” was not found in the specification “explicitly or otherwise.” The Advisory Action states that “[a]ccordingly, applicant’s arguments as to what the application as originally filed was to be construed as meaning, as least with regard to this term, has not been found persuasive toward the withdrawal of the rejection of rejection of claims under 35 USC, second paragraph.” In essence, it appears to be the Examiner’s position that since the word “area” is not explicitly used in the text of the specification, arguments regarding this term are not persuasive. As such, the comments in the

Advisory Action make the rejection seem more like a written description requirement rejection under 35 U.S.C. §112, first paragraph, than a definiteness requirement rejection under 35 U.S.C. §112, second paragraph.

As to 35 U.S.C. §112, second paragraph, the purpose of this provision is to put competitors on notice as to the metes and bounds of the invention. “[the definiteness requirement of 35 U.S.C. §112, second paragraph] has thus been interpreted to require that the claim be spelled out with sufficient particularity and in language sufficiently familiar to one skilled in the art as to inform the latter as to the limits of the claim....There is no requirement that each term appearing in the claim be expressly defined in the claim or specification, as long as ‘those skilled in the art would understand what is claimed when the claim is read in light of the specification.’” *Morton Int’l, Inc. v. Cardinal Chem. Co.*, 5 F.3d 1464, 1470 (Fed. Cir. 1993). Additionally, “[i]f the claims read in light of the specification reasonably apprise those skilled in the art of the scope of the invention, §112, demands no more.” *Miles Labs. Inc. v. Shandon Inc.*, 997 F.2d 870, 875 (Fed. Cir. 1993)(citations omitted).

Further, it is well established in case law that a claim term need not be explicitly used in the specification *in haec verba* in order to satisfy the written description requirement of 35 U.S.C. §112, first paragraph. *In re Lukach*, 442 F.2d 967, 969, 169 USPQ 795 (CCPA 1971). Rather, the specification must instead “convey clearly to those skilled in the art, to who it is addressed, in any way, the information that the applicant has invented the specific subject matter later claimed.” *In re Wertheim*, 541 F.2d 257, 262, 191 USPQ 90, 97 (CCPA 1976), *appeal after remand*, 646 F.2d 527, 209 USPQ 554 (CCPA 1981). Federal Circuit decisions have confirmed

that “*ipsis verbis*” disclosure is not necessary to satisfy the written description requirement of section 112. Instead, the disclosure need only reasonably convey to persons skilled in the art that the inventor had possession of the subject matter in question.” *Fujikawa v. Wattanasin*, 93 F.3d 1559, 1570, 39 USPQ2d 1895, 1904 (Fed. Cir. 1996).

For at least the above reasons, Applicant respectfully submits that the claimed subject matter would be abundantly clear to one having ordinary skill in the art, when viewed in light of the specification, drawings, and the skill of one having ordinary skill in the art. Applicant respectfully submits that the pending rejection is based on an inappropriately narrow definition of the term “area,” a claim term which was previously agreed upon. Furthermore, the fact that a particular word is not recited verbatim in the specification is not germane to a rejection under 35 U.S.C. §112. Therefore, Applicant respectfully submits that the pending claims fully comply with all requirements of 35 U.S.C. §112.

Additionally, Applicant herein amends the claims in order to further clarify the claimed embodiments. Specifically, the pending claims recite a step of *partitioning* the container into a first area, a second area, and optionally, a third area. This is done by inserting the gel (or other type of partition) into an empty container. The claims further recite filling the first, second and, optionally, third areas with a first, second and, optionally, third solution. This subject matter is supported at least by the passage at page 6, lines 9-17. The claims are further amended in order to clarify the biopolymers are moved, for example, from the first solution in the first area into the partition and into the second solution in the second area. Favorable reconsideration is respectfully requested.

Applicant's Response to Claim Rejections under 35 U.S.C. §102

Claims 1-3 were rejected under 35 U.S.C. §102(b) as being anticipated by Alam (U.S. Patent No. 5,635,045).

It is the position of the Office Action that Alam discloses the invention as claimed. Alam is directed at an apparatus for, and a method of, electroelution isolation of biomolecules and recovering biomolecules after elution. As illustrated in Figure 1, the system includes a reservoir tank 1 with a separating gel 3 on a horizontal platform 2. The reservoir 1 is filled with buffer 4. Biomolecules are loaded into wells formed in the separating gel 3. Column 5, lines 16-18. The biomolecules are then migrated due to an electrophoretic force between the electrodes 5 and 6. When the biomolecules have migrated partially through the gel 3, a portion of the gel is cut out by a tubular enclosure 7. See Figure 6. This portion of the gel 3 is then placed in the buffer solution. The electrophoretic force causes the biomolecules to migrate until they are accumulated in the membrane 16 of the closure means 8. See Figure 9.

Applicant first discusses claim 1. In the telephone discussion of September 18, 2007, the Examiner raised the possibility that wells of a conventional agarose gel could be interpreted as a "first area," since the wells are allegedly partitioned from other areas by the gel. Thus, with respect to claim 1, the Examiner appears to interpret the un-illustrated wells in the separating gel 3 as a "first area," the separating gel 3 itself as a "partition," and the reservoir to the right of the separating gel 3 as a "second area."

However, Applicant respectfully submits that Alam does not disclose or suggest "moving said target biopolymer from within said first area through said partition into said second area

using electrophoresis.” In Alam, the biomolecules are moved from wells into the gel 3. Then the gel is cut by a tubular enclosure 7, such that the tubular enclosure 7 holds a gel piece 17. The gel piece 17 is then placed back in the electrophoresis chamber. Then, the biomolecules are run from within the gel piece 17 to accumulate onto a membrane 16. “The semipermeable closure means membrane 16 prevents the migration of protein and nucleic acid out into the buffer tank without hindering the electrophoresis electric field.” Column 6, lines 22-25.

On the other hand, claim 1 requires that the target biopolymers be moved from the first solution in the first area into the partition and then into the second solution into the second area. The target biopolymers are then separated from a buffer in the second area. As an example, in Figure 1, target DNA 5 is moved from within solution A 2, into gel 4, and into solution B 3. The target DNA 5 is then separated from the buffer Solution B 3. However, in Alam, the biopolymers are moved from wells (allegedly analogous to a “first area”) into a gel 3 (allegedly analogous to a “partition”). However, the biopolymers are never moved from within the gel 3 into a second area, since the biopolymers are accumulated on a membrane 16. This membrane 16 cannot be a “second area” as set out in the “partitioning” step, since it is not an area of the container partitioned by a partition such as a gel. Rather, the membrane 16 is a separate component. Additionally, Applicant herein amends the claims to clarify movement into a second solution in the second area. The membrane 16 does not include any solution and thus Alam cannot disclose the embodiment as claimed.

The Advisory Action dated July 24, 2008 only discusses the embodiment of claim 1 (partitioning into first and second areas), and does not discuss the embodiments of claims 2 and 3

(partitioning into first, second and third areas). The Advisory Action states that the word “area” is not disclosed in the specification, and that the word “partition” is only used three times. The Advisory Action notes that the word “partition” is used “to define a gel that “partitions” a buffer into a first and second buffer, and optionally, into a third buffer.” The Advisory Action goes on to state that “[t]his definition is seemingly ignoring the aspect that the same buffer is to be found on all sides of (including above) as well as within the gel.”

As to these points, Applicant clarifies that the term “partition” is not used to “define” a gel. A partition is recited generally in claims 1 and 2. Examples of this partition include a gel, pillar array and porous filter. The “partition” is in no way “defined” or limited by a gel, or vice versa. Additionally, it is noted that the claims were amended from their original recitation of partitioning the container into separate “solutions,” to their subsequent recitation of partitioning the container into separate “buffer chambers,” to their present recitation of partitioning the container into separate “areas.” Applicant respectfully requests that care is made to address the pending claim language, not previous claim language.

As to the merits, the Advisory Action only discusses claim 1. As to the requirement that biopolymers are moved into a “second area using electrophoresis,” the Advisory Action relies on a new interpretation of Alam. The Advisory Action correctly notes that Alam discloses moving nucleic acids in the gel to an area that is excised. The Advisory Action then states that this “area that is excised is considered to meet the limitation of applicant’s “second area.”” In other words, the Advisory Action regards a portion of a “partition” to be a “second area.” As to separating the target biopolymer from the buffer in the second area, the Advisory Action states that “the aspect

of physically removing the section of [the] gel is considered to meet the limitation of “separating the target biopolymer from a buffer in the second area.””

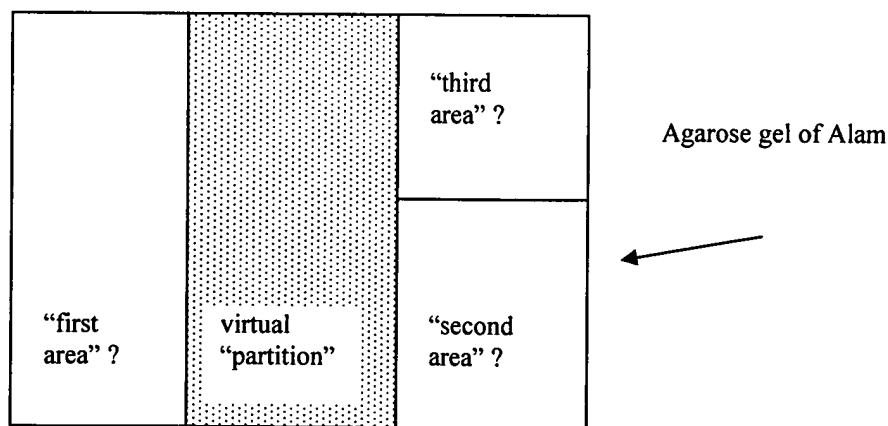
Here, Applicant respectfully submits that the Advisory Action inconsistently interprets Alam. Alam is regarded as having a separating gel 3 which partitions the reservoir tank 1 into a first area (left of the gel 3 in Figure 1) and a second area (right of gel 3 in Figure 1). However, the Advisory Action then regards the “second area” not as the area to the right of the gel 3, but rather as a portion of the separating gel 3 which is excised. The excised area of the gel 3 cannot be “second area,” since it was not separated from the alleged “first area” by the alleged partition. In other words, the excised portion of the gel cannot simultaneously be a part of the “partition” and the “second area.” Thus, for at least the reasons discussed above, Applicant respectfully submits that Alam does not disclose or suggest the embodiment as recited by claim 1. Favorable reconsideration is respectfully requested.

Next, Applicants discuss claim 2. Applicant respectfully submits that Alam does not disclose or suggest the “partitioning...” step as claimed. Claim 2 requires “partitioning a container into a first area, a second area and a third area with the use of a partition.” It is unclear how the Examiner regards the container to be partitioned with respect to claim 2. The Office Action states that “the first, second and third “areas” have been construed as being simply different areas of a single gel, where there is no material difference in the composition of the gel exists and where the “partitioning” is virtual, not physical.” February 6, 2008 Office Action, paragraph 10. The Office Action goes on to state that “[s]aid expression has also been construed

as encompassing “areas” that have a material difference and which may, or may not, have a physical barrier forming a physical partition.” February 6, 2008 Office Action, paragraph 10.

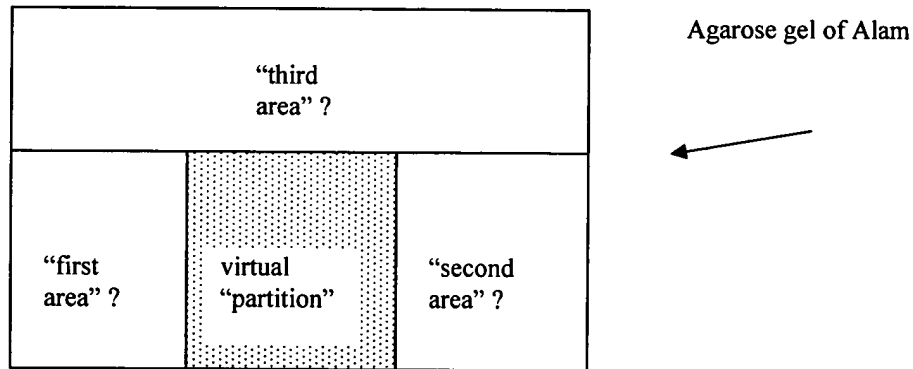
As noted above, claim 2 requires the step of “partitioning a container into a first area,...a second area,...and a third area...from each other with the use of a partition.” In other words, a partition (such as a gel) interposes the first, second and third areas. Even if, *arguendo*, the agarose gel of Alam is interpreted to be “virtually partitioned,” it cannot disclose the recited “partitioning.”

For example, Alam could be “virtually” partitioned in manners such as in the following plan views of the separating gel 3:



In this example, while the first and second area would be virtually partitioned from each other by a virtual partition, and the first and third areas would be virtually partitioned from each other by a virtual partition, the second and third areas would not be partitioned from each other in any way. Thus, such a “virtual partitioning” would not meet the requirements of the “partitioning” step of claim 2.

Similarly, the following “virtual” partition could also be made:



In this example, although the first and second areas may be virtually partitioned from each other by a virtual partition, the first and third areas would not be partitioned from each other at all. Likewise, the second and third areas would not be partitioned from each other at all. Thus, such a “virtual partitioning” would not meet the requirements of the “partitioning” step of claim 2. Accordingly, Applicant respectfully submits that Alam cannot disclose or suggest the “partitioning...” step as recited by claim 2.

However, even if, *arguendo*, Alam disclosed a virtual or physical partitioning that meets the requirements of the “partitioning” step, Alam does not disclose or suggest the remaining elements of claim 2. Claim 2 requires that the target biopolymers be moved from the first area into the partition and then from the partition into the third area. Claim 2 also requires that the other biopolymers are moved from the first area through the partition and into the second area. Claim 2 also requires first and second electrophoresis devices. Alam does not disclose or suggest such as second electrophoresis device, and the Examiner fails to clearly identify a second electrophoresis.

As an example, in Figure 2, target DNA 5 is moved from within solution A 2, into gel 4 by first electrophoresis device 6/7/8. Other biopolymers are moved from within solution A 2, into gel 4, and then into solution B 3 by first electrophoresis device 6/7/8. Target DNA 5 is then moved from within gel 4 into solution C 10 by second electrophoresis device 11/12/13. The target DNA 5 is then separated from the buffer Solution C 10.

In Alam, the biopolymers are moved from wells (allegedly analogous to a “first area”) into a gel 3 (allegedly analogous to a “partition”). However, the biopolymers are never moved from within the gel 3 into a second area or a third area, since the biopolymers are accumulated on a membrane 16. The Office Action fails to identify specifically what is regarded as the first, second and third areas, and fails to identify where Alam discloses the biopolymers moving into the second and third areas as recited. This membrane 16 cannot be a “second area” or a “third area” as set out in the “partitioning” step, as it is not an area of the container partitioned by a partition such as a gel. Rather, it is a separate component. Thus, for at least the reasons discussed above, Applicant respectfully submits that Alam does not disclose or suggest the embodiment as recited by claim 2. Furthermore, Applicant respectfully submits that claim 3 is patentable over Alam at least due to its dependency on claim 2.

Claim Rejections – 35 U.S.C. §§ 102 and 103

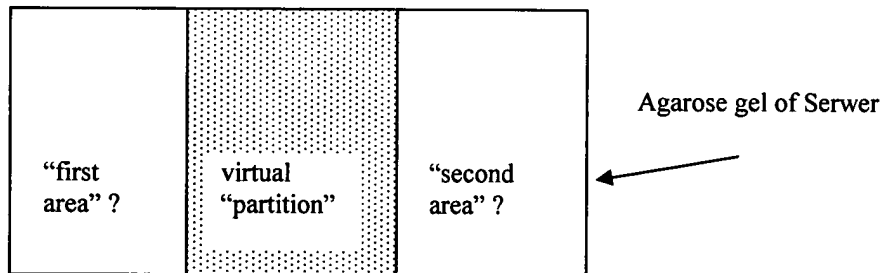
Claims 1-3 were rejected under 35 U.S.C. §102(b) as being anticipated by, or in the alternative, under 35 U.S.C. §103(a) as being unpatentable over Serwer et al. (U.S. Patent No. 5,009,759).

It is the position of the Office Action that Serwer discloses the invention as claimed. Notably, the Office Action states that “[f]or the purposes of examination, the terms “partition” and “area” have been construed as encompassing not only pillar arrays, and filters but also gels.” February 6, 2008 Office Action, paragraph 18.

Serwer is directed at methods for producing agarose gels having variable pore sizes. Serwer is only directed at an agarose gel and a method of making an agarose gel. Although Serwer discloses separating proteins, DNA, RNA, polysaccharides and the like, Serwer does not disclose or suggest any specific use of the agarose gel.

The Office Action states that portions of the gel gradient are “deemed to meet the limitation of applicants first and second “partition” as the target biopolymers are removed/separated/portion from the other biopolymers.” February 6, 2008 Office Action, paragraph 19. However, Applicant respectfully notes that the claims do not recite first and second partitions. Rather, the claims recite first and second areas, which are separated from each other by a partition, which may be a gel, for example. Applicant respectfully requests that any future Office Action carefully address the specifically recited claim language.

The February 6, 2008 Office Action appears to broadly interpret claim 1 such that it includes “virtual” partitioning, instead of “physical” partitioning. As such, the Office Action appears to be interpreting the Serwer in a manner summarized by the following drawing:



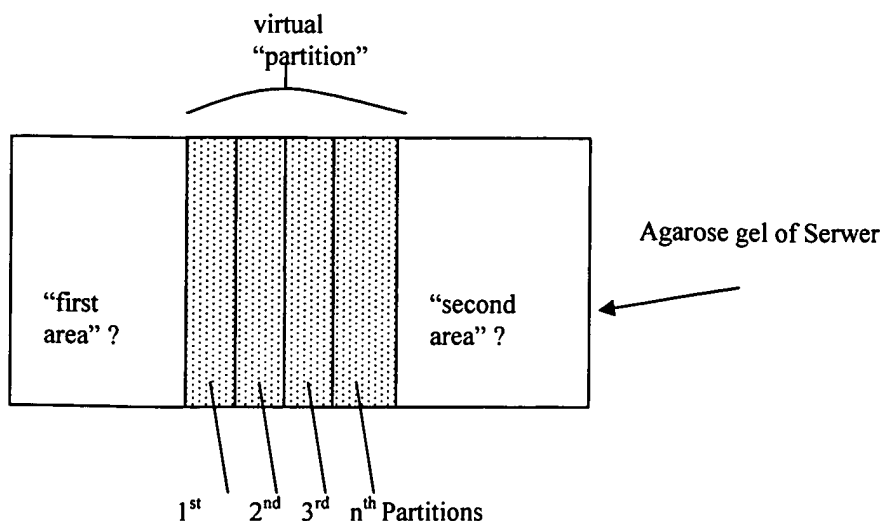
As noted above, Serwer does not disclose or suggest a specific application of the agarose gel. It appears that the Office Action relies upon the broad discussion of separation of proteins, DNA, RNA and polysaccharides. As such, it appears to be the position of the Office Action that the entire gel would be analogous to a “container,” an abstract portion of gel would be a virtual “partition” and portions of the gel which abut such an abstract portion would be “a first area” and “a second area.”

The Advisory Action dated July 24, 2008 correctly states that claim 1 requires that first and second areas are separated by a partition, and the partition can be a gel. The Advisory Action states that Serwer discloses “a method of separating nucleic acids via electrophoresis wherein the gel has a constant amount of agarose, but different pore sizes and different buffer within the gel.” The Advisory Action states that Serwer is interpreted as disclosing infinite partitions which are adjacent to each other. The Advisory Action further states that, in Serwer, “[a]s the gradient of pore sizes changes, so to [sic] does the buffer.” The Advisory Action states that “the movement of the nucleic acid through the gel also moves the nucleic acid from a first, to a second, and on to

an nth different buffer/area.” Here, the Examiner’s comments are confusing, since the terms “area,” “buffer” and “partition” are apparently being used interchangeably.

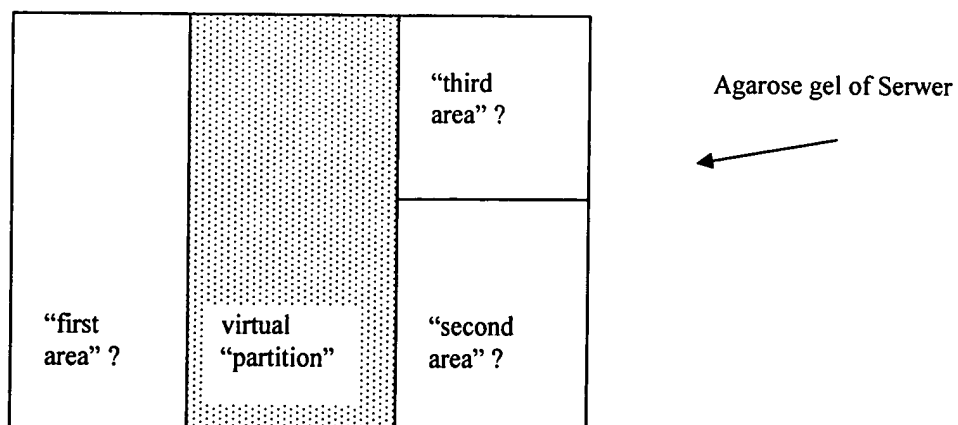
Server is directed at the formation of an agarose gel which has variably sized pores. During this formation of the agarose gel, different buffers may be used, in order to give rise to variably sized pores in strips of the gel. Different buffers are not used during electrophoresis itself. Server makes this clear at column 7, lines 15-19, where it is stated that “[a]fter formation of a gel with a pore size gradient by gelation at varying buffer/salt concentrations, the buffer and/or salt may preferably be removed and replaced by a selected buffer appropriate for the electrophoresis process.”

The apparent position of the Advisory Action is that the gel of Server is a container, a part of the gel (the left side of the gel) is a first area, a part of the gel is a second area (the right side of the gel) and the part of the gel between the left and right sides of the gel is a partition which comprises an infinite number of adjacent sub-partitions. Applicant’s best guess at the Examiner’s position is illustrated below:



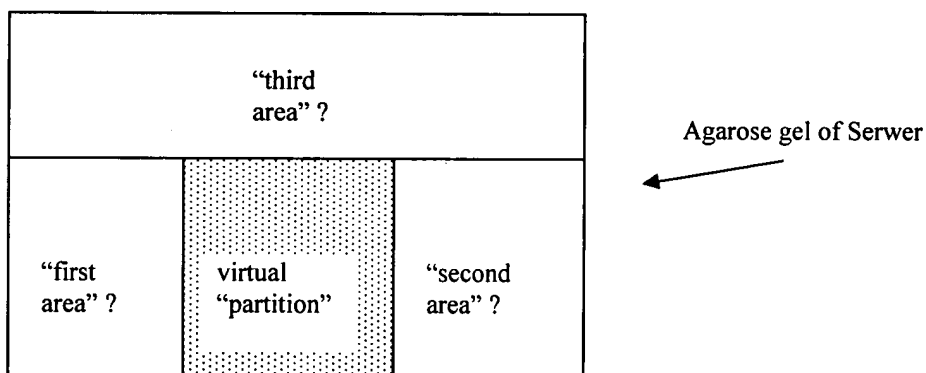
In response to the pending rejection, Applicant respectfully submits that Serwer does not disclose or suggest the embodiment of claim 1. In particular, Applicant respectfully submits that a portion of the agarose gel of Serwer cannot reasonably be interpreted as an “area” as claimed. This is because the claims require the partition is optionally a gel. Additionally, the claims require that biopolymer is moved from the first area, into the gel, and then into a second area. In Serwer, a biopolymer is move from one side of a gel, to the middle of a gel, to another side of the gel. At all times, the biopolymer is retained within the gel. As such, it is improper to interpret the gel of Serwer as another other than being analogous to the partition of claim 1. In other words, no part of the gel of Serwer can reasonably be interpreted as a “first area” and a “second area. Favorable reconsideration is respectfully requested.

Claim 2 requires the step of “partitioning a container into a first area,...a second area,...and a third area...from each other with the use of a partition.” In other words, a partition (such as a gel) interposes the first, second and third areas. Even if Serwer is interpreted to be “virtually partitioned,” it cannot disclose this. For example, Serwer could be “virtually” partitioned in manners such as the following plan views of the gel:



In this example, while the first and second area would be virtually partitioned from each other by a virtual partition, and the first and third areas would be virtually partitioned from each other by a virtual partition, the second and third areas would not be partitioned from each other at all. Thus, such a “virtual partitioning” would not meet the requirements of the “partitioning” step of claim 2.

Similarly, the following “virtual” partition could also be made:



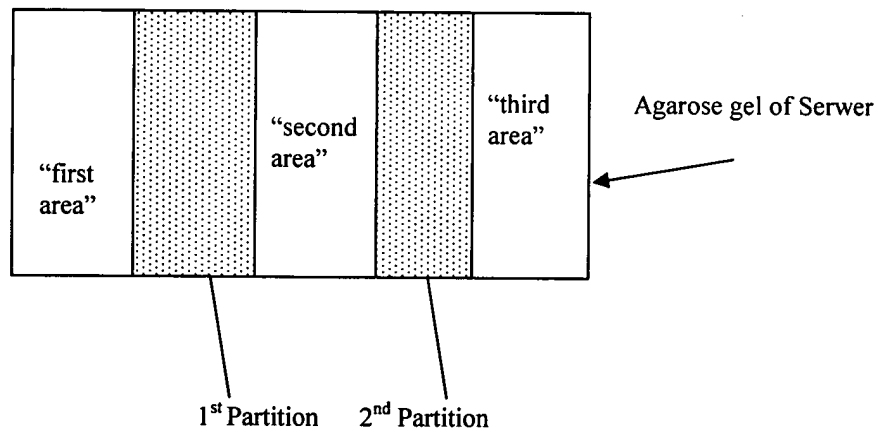
In this example, although the first and second areas would be virtually partitioned from each other by a virtual partition, the first and third areas would not be partitioned from each other at all. Likewise, the second and third areas would not be partitioned from each other at all. Thus, such a “virtual partitioning” would not meet the requirements of the “partitioning” step of claim 2. Accordingly, Applicant respectfully submits that Server does not disclose or suggest the “partitioning...” step as recited by claim 2.

Additionally, Server does not disclose or suggest the three distinct “moving...” steps as recited by claim 2. Even if, *arguendo*, Server discloses or suggested first, second and third areas partitioned from each other with the use of a partition, Server does not disclose or suggest any such movement of biopolymers which would conform to the recited “moving...” steps. In other

words, even if the Office Action interprets Serwer to be “virtually” partitioned into three areas, Serwer cannot anticipate claim 2 unless it teaches (i) moving “other biopolymers” from a first area through a partition (such as a gel) into a second area, (ii) moving “target biopolymers” from a first area into the partition, and (iii) moving “target biopolymers” from within the partition into a third area. Serwer does not teach this. Additionally, Serwer does not disclose or suggest using a first electrophoresis device and a second electrophoresis device, as required by claim 2. Finally, as above, Applicant respectfully submits that Serwer does not disclose or suggest the “separating...” step of claim 2.

The Advisory Action dated July 24, 2008 correctly states that the claims require that first and second areas are separated by a partition, and the partition can be a gel. The Advisory Action states that Serwer discloses “a method of separating nucleic acids via electrophoresis wherein the gel has a constant amount of agarose, but different pore sizes and different buffer within the gel.” The Advisory Action states that Serwer is interpreted as disclosing infinite partitions which are adjacent to each other. The Advisory Action further states that, in Serwer, “[a]s the gradient of pore sizes changes, so to [*sic*] does the buffer.” As to claim 2, the Advisory Action states that “the infinite number of difference in pore sizes also speaks directly to an inherent infinite number of buffers that make of [*sic*] the gradient.” The Advisory Action states that “the movement of the nucleic acid through the gel also moves the nucleic acid from a first, to a second, and on to an nth different buffer/area.” Here, the Examiner’s comments are confusing, since the terms “area,” “buffer” and “partition” are apparently being used interchangeably.

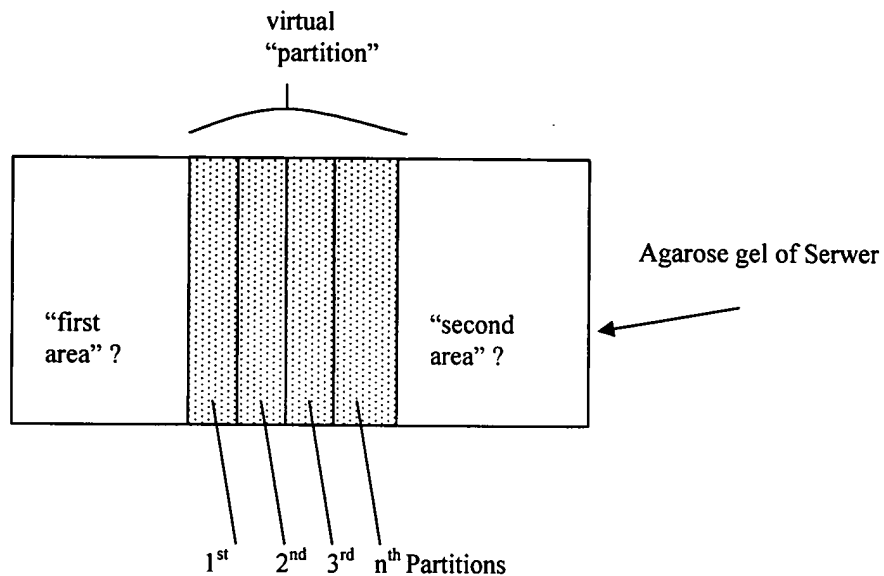
It is noted that the Advisory Action indicates that the claims may include additional partitions and additional areas. While this is true, the claims require “a partition” which separates the areas. In other words, with respect to claim 2, a single partition must divide the container into three parts. Thus, the following interpretation is NOT allowed by the claims:



Serwer is directed at the formation of an agarose gel which has variably sized pores. During this formation of the agarose gel, different buffers may be used, in order to give rise to variably sized pores in strips of the gel. Different buffers are not used during electrophoresis itself. Serwer makes this clear at column 7, lines 15-19, where it is stated that “[a]fter formation of a gel with a pore size gradient by gelation at varying buffer/salt concentrations, the buffer and/or salt may preferably be removed and replaced by a selected buffer appropriate for the electrophoresis process.”

The Advisory Action’s apparent position is that the gel of Serwer is a container, a part of the gel (the left side of the gel) is a first area, a part of the gel is a second area (the right side of the gel) and the part of the gel between the left and right sides of the gel is a partition which

comprises an infinite number of adjacent sub-partitions. Applicant's best guess at the Examiner's position is illustrated below:



As to claim 2, a series of "infinite" adjacent partitions cannot separate the gel of Server into three areas. Thus, for at least the reasons discussed above, Applicant respectfully submits that Server does not disclose or suggest the embodiment as recited by claim 2. Furthermore, Applicant respectfully submits that claim 3 is patentable over Alam at least due to its dependency on claim 2.

Claims 7 and 8 were rejected under 35 U.S.C. §103(a) as being unpatentable over Alam in view of Straume et al. (U.S. Patent Application Publication No. 2006/0127942).

It is the position of the Office Action that Alam discloses the invention as claimed, with the exception of disclosing the use of magnetic beads. The Office Action relies on Straume to provide this teaching.

Straume is directed at a particle analysis assay for biomolecular quantification. In this assay, DNA probes are attached to two types of beads: magnetically responsive and magnetically non-responsive. The DNA probes then hybridize with target DNA. Next, the magnetically responsive beads are separated from the non-magnetically responsive beads. These magnetically responsive beads may be separated from non-magnetically responsive beads by electrophoresis. See paragraphs [0123]-[0126]. However, these beads must also be electrically charged. See paragraph [0123].

First, Applicant respectfully submits that the combination of Alam and Straume does not disclose or suggest the “partitioning...” step as claimed. Similar to claim 2, discussed above, claim 7 requires “partitioning a container into a first area,...a second area,...and a third area...from each other with the use of a partition.” It is unclear how the Office Action regards the container to be partitioned with respect to claim 7. It is noted that the Office Action only refers to a “second area,” and does not state where the combination of Alam and Straume discloses a “third area.” To further illustrate this, Applicant notes that the Office Action alleges that the combination of references discloses “separating the target biopolymer (e.g., nucleic acids) from the buffer in the second “area”.” February 6, 2008 Office Action, paragraph 27

(emphasis added). However, claim 7 actually recites “separating the target biopolymer fixed to said magnetic bead from a buffer in said third area” (emphasis added). Again, Applicant respectfully requests that future Office Actions, if issued, carefully address the specifically recited claim language.

Furthermore, Straume only discloses injecting the beads into the buffer of a standard electrophoresis apparatus. This conflicts with the teaching of Alam, which discloses inserting the samples into wells. Furthermore, the combination of Alam and Straume contains no suggestion or disclosure of separating a container into three areas by a partition such as a gel. Rather, the combination of Alam and Straume only appears to disclose a partial separation of a container into two areas. Thus, Applicant respectfully submits that the combination of Alam and Straume does not disclose or suggest the embodiment as recited by claims 7 and 8. Favorable reconsideration is respectfully requested.

As to this rejection, the Advisory Action does not provide any remarks other than repeating his position with respect to Alam. Applicant had argued briefly that Straume is conflicting with Alam in that Alam required insertion of samples into wells, while Straume required injecting beads into a buffer. The Advisory Action provides no comments on this point. Applicant respectfully request that a subsequent Office Action, if issued, fully respond to all arguments herein.

Additional Remarks

Additionally, Applicant respectfully requests that a future Office Action, if issued, address each independent claim separately in each rejection, in order to ensure maximum clarity. Applicant also respectfully requests that a future Office Action clearly note where the references are alleged to disclose each claim element. Reference to specific reference numerals or line numbers of the cited art, as well as provision of any illustrations which may be helpful, would be welcomed.

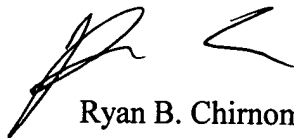
For at least the foregoing reasons, the claimed invention distinguishes over the cited art and defines patentable subject matter. Favorable reconsideration is earnestly solicited.

Should the Examiner deem that any further action by applicants would be desirable to place the application in condition for allowance, the Examiner is encouraged to telephone applicants' undersigned attorney.

If this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. The fees for such an extension or any other fees that may be due with respect to this paper may be charged to Deposit Account No. 50-2866.

Respectfully submitted,

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